XXII. *Notæ Dipterologicæ. No. 5.—Descriptions of new species of Exotic* Tipulidæ, *with an annotated summary of species belonging to the same family, previously described.* By J. O. Westwood, M.A., F.L.S., &c.

[Read November 3rd, 1880.]

On previous occasions I have read before this Society descriptions of various new species of dipterous insects belonging to the family *Tipulidæ*, and have also published descriptions of others in various works, some of which are not easily accessible to the student. Having been applied to for copies of these latter descriptions, which I have not been able to procure, I have thought it desirable to bring together all the exotic species of this family which I have hitherto published, republishing the descriptions with notes upon such as have been subsequently commented upon by dipterologists. Of the species, however, published in our 'Transactions,' I have only thought it necessary to give the proper bibliographical references.

The following is a list of the species described or referred to in the following pages:—

Mongoma fragillima.
Dapanoptera plenipennis.
Sigmatomera Amazonica.
Eriocera lunata.
Gynoplistia vilis.
,, cyanea.
,, bella.
,, annulata.
,, punctipennis.
,, Wakefieldii.
Limnobiorhynchus Brasiliensis, female.
Geranomyia Brasiliensis, male.
,, Canadensis.
Asthenia fasciata.
Megistocera dimidiata.
Caloptera Nepalensis.
Cerozodia interrupta.
Ozodicera gracilis.
,, longipedalis.
Ptilogyna ramicornis.
Bittacomorpha clavipes.
Semnotes imperatoria.
,, ducalis.
Tipula Brobdignagia.
,, Mikado.
Limnobia Satsuma.
Libnotes Thwaitesiana.
Platyura (Platyroptilon) Miersii.
Culex alternans.

Mongoma, n. g.

Corpus elongatum gracillimum, abdomine filiformi. Caput parvum collo tenui, thoraci affixum. Palpi parvi capite breviores. Antennæ gracillimæ 16-articulatæ setis instructæ, articulo 1mo ovali crassiori, 2ndo brevissimo; 3tio, 4to, et 5to longitudine 1mi fere æqualibus et sequentibus crassioribus, 6to et reliquis pergracilibus et fere æqualibus. Thorax parvus ovalis antice compressus. Alæ elongatæ, angustæ, vena 2nda paullo ante medium venæ 1mæ emissa, et prope apicem ejus venula obliqua connexa; pone hanc venulam furcata, parte superiori furcæ obliqua et costam inter apicem venæ 1mæ et apicem alæ attingente; parte inferiori furcæ ad apicem alæ extensa; cellula discoidali extus venas 4 emittenti duabus intermediis brevioribus et subæque longis; basi cellulæ cum vena recurrenti continua; vena 5ta apice obliqua et apicem venæ 6tæ conjuncta in marginem posticum alæ. Pedes longissimi gracillimi; femoribus anticis supra spinulis duabus, extus directis, haud longe pone caput armatis; tibiis apice ecalcaratis. Tarsi unguibus elongatis acutis parum curvatis et prope basin paullo dilatatis; empodium carentibus.

Mongoma fragillima. (Pl. XVII., fig. 1).

Piceo-nigra, thorace dilutiori; alis parum infuscatis pseudostigmate obscuriore; pedibus fuscis, geniculis, tibiarum apice, tarsisque integris albis. Long. corp. $4\frac{1}{2}$ lin. Expans. alar. $8\frac{1}{2}$ lin. Long. ped. singul. 19 lin.

Hab. Mongoma Lobah, Africa tropicali. In Mus. Hopeiano Oxoniæ (*D. Hornimanno communicata*).

I am indebted to the Baron Osten-Sacken for the following notes on the relations of this singular little species:—

"The systematic position of this species is very puzzling, and I regret that I did not give it more attention when you showed it to me. It is important to know whether it has spurs at the tip of the tibiæ and a distinct empodium between the claws. If there are no spurs, and the empodium is present, the species may belong in the vicinity of my genus *Empeda* (Monogr. N. Am. Dipt., vol. iv. p. 193). An important difference, however, and a very striking character of your species,

consists in the contact of the second submarginal cell with the discal, the consequence of which is that the small or anterior cross vein is wanting. A similar structure exists in the genus *Paratropesa*, Schiner (Novara, p. 44, pl. ii., fig. 2), and in a few other rare instances in the family *Tipulidæ*. But your genus is certainly not *Paratropesa*, because in that genus the first longitudinal vein is remarkably short, and does not reach much beyond the proximal end of the discal cell. You would be justified, therefore, in describing it as a new genus."

DAPANOPTERA, *Osten-Sacken MS.*

This genus has been proposed for several beautiful species of gnats from New Guinea and Mysol, described (without proper notice of their precise structural peculiarities) by the late Mr. F. Walker under the names of *Limnobia latifascia* (Proc. Linn. Soc. viii. p. 104); *L. auroratra** (Ibid. viii. p. 202); *L. perdecora* (Ibid. v. p. 230); and *L. plenipennis* (Ibid. viii. p. 103, New Guinea).

These species agree in the remarkable characters of having the extremity of the first longitudinal vein evanescent before reaching either the costa or the extremity of the wing, which is marked shortly before the apex, in some of the species at least, by a white opaque transverse patch; and it is at the proximate edge of this patch that the first longitudinal vein suddenly ends.

I am indebted to the Baron Osten-Sacken for the following notes on this insect:—

"In the paper which I am preparing on Exotic *Tipulidæ*, I have established a new genus on *Limnobia plenipennis*, Walk., from New Guinea, and three others of Walker (all from New Guinea and Mysol). The characters of the new genus are—the evanescence of the tip of the first longitudinal vein, together with the cross vein adjoining it; the presence of a cross vein in the first posterior cell, together with the variegated colouring of the wings. This genus is closely related to *Limnobia* (*sensu stricto*), and will be called *Dapanoptera* (from dapane = expense, luxury, profusion)."

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* Altered to *auroatra* in Proc. Linn. Soc. ix. p. 7, the name *auroratra* being evidently a typographical lapsus.

Dapanoptera plenipennis. (Pl. XVII., fig. 2).

Walker, *l. c. supra* (*Limnobia plenipennis.*)

The fore wing of this very remarkable species is represented from a specimen from New Guinea, which I purchased and which is now in the Hopeian Collection. It has unfortunately the antennæ broken; the thorax is anteriorly very gibbose; the head small and affixed very low; the tibiæ have a very short slender spine at the extremity; the tarsi are destitute of an empodium; the extremity of the body is furnished with two rounded lobes and two recurved acute bifid horny spines.

The singularly irregular posterior margin of the wing is unique among dipterous insects, and it is strange that Mr. Walker should not have recorded it. His description of *D. plenipennis* is as follows:—

Male. Chestnut-colour, shining. Head, palpi, and antennæ, black. Thorax attenuated in front; pectus testaceous in front. Abdomen short, dull ochraceous, black towards the tip, very little longer than the thorax. Legs brown, long, slender; coxæ and femora testaceous, the latter with brown tips. Wings cinereous; basal and subapical parts pale luteous; three irregular blackish stripes; first stripe costal terminated by a white transversely-elongated blackish-bordered spot; second including two elongated white spots and two white points, beyond which there are two white blackish-bordered dots; third paler and diffuse, including one elongated white spot; a discal areolet, radial vein not forked; first externo-medial vein not forked; no second externo-medial vein; third externo-medial vein forked; one veinlet between the third externo-medial vein and the subanal vein, nearer than the discal areolet to the base of the wing; halteres testaceous, with white knobs. Length of the body 5 lines; of the wings 14 lines.

Sigmatomera.

Osten-Sacken, Monogr. of N. Amer. Dipt., vol. iv. p. 137.

Sigmatomera Amazonica, n. s. (Pl. XVII., fig. 3).

Capite obscure fulvo, oculis magnis fere in medio faciei conjunctis; palpis brevibus lutescentibus; antennis nigris 15-articulatis, thorace plus duplo longi-

oribus, setosis, articulis 3tio ad apicalem nodosis, nodo apicem singuli articuli occupante, articulo sequenti in dorsum lobi oblique insidente; articulis apicalibus sensim gracilioribus; thorace nigro, halteribus flavis; abdomine maris elongato depresso setoso fulvo, apice fusco; pedibus longis gracilibus, femoribus fulvis apice obscurioribus, tibiis apice inermibus, tarsisque pallide fuscis; alis pallide flavis, macula subbasali, fascia paullo pone medium alæ, apiceque fuscis; cellulis duabus discum alæ occupantibus æque longis; cellula nulla vera discoidali. Long. corp. 5 lin.; abdom. $3\frac{1}{4}$ lin. Expans. alar. 11 lin. Long. antenn. 4 lin.

Hab. Amazonia (*Bates*). In Mus. Hopeiano Oxoniæ.

The Baron Osten-Sacken has favoured me with the following notes on this insect:—

"I would place this species, at least provisionally, in the genus *Sigmatomera*, the typical species of which *S. flavipennis*, from Mexico, is published in the Additions and Corrections to Mon. N. Am. Dipt. vol. iv., which are placed at the end of vol. iii., because it appeared much later than vol. iv. Your species has nearly the same venation as *Sigmatomera*, only the discal cell is open, which is a character of secondary importance only. *Sigmatomera* has the same remarkably nodose antennæ, although the details of their structure are somewhat different. It has the same large, convex, approximate eyes, and, more important than all, no spurs at the tip of the tibiæ. This last character I hold to be a decisive proof of the relationship, as well as of the systematic position of both species. They belong to that small group of *Tipulidæ brevipalpi* that have the characters and habitus of the section *Limnophilina*, but no spurs at the tip of the tibiæ, which gives them an artificial position in the section *Eriopterina*. That your antennæ count fifteen joints, and not sixteen, the normal number, I look upon as unimportant, as the last joint is often a mere rudiment."

ERIOCERA, *Macquart*.

Eriocera lunata, n. s. (Pl. XVIII., fig. 4.)

Affinis *E. selene*, Osten-Sacken, Enum. Dipt. Malayan Archipel. p. 18.

Badia, thorace glabro nitido, abdomine luteo-brunneo, antennis longissimis fuscescentibus articulis duobus

basalibus luteis, ultimo (5to) præcedenti sextuplo longiori; capite tuberculo magno antico supra basin antennarum prominente; pedibus lutescentibus; alis fuscis lunula parva inter basin et medium, macula magna lunata media (ad costam pone medium attenuata et interrupta) maculaque altera subtrigona infra apicem, albis; ultima striga oblique fusca in duas partes divisa. Long. corp. unc. $\frac{1}{3}$=4 lin. Expans. alar. 11 lin. Long. articuli 3tii antennarum 2 lin.; 4ti 2½ lin.; 5ti 12 lin.

Hab. Sarawak, Borneo (*Wallace*). In Mus. Hopeiano Oxoniæ (*olim nostr.*).

The length and slenderness of the antennæ, with the spotted wings, render this insect extraordinary. The large rounded tubercle on the front part of the head appears to be natural. The antennæ appear to be only 5-jointed; the third joint is thrice the length of the head and first joint of the antennæ, the terminal joint being six times longer than the preceding joint; they are extremely slender and very finely setose; the palpi are not longer than the head; the tibiæ are armed at the tip with a distinct acute spur; and the abdomen is terminated by two horny elongated recurved appendages, each with a short curved very acute spine. The second longitudinal vein emits close to its base a short spur into the disc of the wing, and the discal cell is nearly square, and emits three equal veinlets at its outer margin.

I am indebted to the Baron Osten-Sacken for the following notes on this genus:—

"This genus is closely allied to *Anisomera*, and, like the latter, easily distinguished from all the *Tipulidæ* by the abnormal number of antennal joints: usually six in the male,* and about ten in the female. *Erioceræ* are numerously represented in the tropical regions of the Old, and of the New, World. In North America they are not rare in the temperate, and even in the colder region, and reach as far north as Canada. In Europe they are much more rare, and are represented by two species only (genus *Penthoptera*, Schiner), which occur, as far as I know, only in the south and south-east

* "No wonder that you do not perceive any articulations but two in the long extremity of the antenna of this species. This species should have six joints in the antenna; you make out five, but it may be that the last joint is rudimental."—Osten-Sacken, *in. litt.*, July 24th, 1880.

of that part of the world. A small number of *Erioceræ* differ from the others in the enormous elongation of the antennæ of the male sex, in comparison to those of the female. The geographical distribution of these latter species is singular; among the large number of *Erioceræ* which I have seen, I have met with only four such species from North America, three from the Indian Archipelago, and two fossil ones included in Prussian amber. The numerous *Erioceræ* from Mexico, South America, India, and China, which I have seen, all have short antennæ in both sexes. The species figured by you is one of the three species of that group which occur in the Indian Archipelago; the other two are *E. verticalis*, Wied., from Java, and *E. atra*, Doleschall, from Amboina. The latter I have never seen, but have little doubt that it belongs here, although described as a *Megistocera*."

To the preceding Malayan species must be added *Eriocera morosa* (Celebes) and *E. selene* (Sumatra), recently described by the Baron Osten-Sacken, from the Genoa Museum. Enumeration Dipt. Malay. Archipel., p. 18.

GYNOPLISTIA.

Westw., in Lond. & Edinb. Phil. Mag., April, 1835, p. 280.

Gynoplistes [nec *Anoplistes*], Westw., Zool. Journ., vol. v. (No. 20, September, 1835), p. 447.

Ctenophoræ affinis. Rostrum (vel clypeus) capite brevius. Antennæ capite multo longiores, in utroque sexu supra pectinatæ, mas. 18- fœm. 17-articulatæ. Abdomen fœm. depressum latum, apice acuminato, oviductu exserto acuto. Alarum venæ ut in *Ctenophora flavcolata* dispositæ.

Sectio 1ma. Antennæ maris graciles, singulo articulorum 3—17 ramum longum gracilem superne emittente.

Gynoplistia vilis. (Pl. XVIII., fig. 6, antenna).

Ctenophora vilis, Walker, Ent. Mag., ii. 469; Westw., Phil. Mag. ut supra (*G. vilis*).

Gynoplistes nervosa, Westw., Zool. Journ. v. 5, No. 20, p. 447; plate xxii. figs. 10, 11.

♂. Fusco-nigra; abdomine subrufescente margine postico segmentorum pallido, apice (ano) obscuriore;

alis pallide fuscis, venis, macula parva antica centrali alteraque pone medium obliqua nigris; pedibus fuscis, femoribus basi pallidis. Long. corp. mas. 6 lin. Expans. alar. 11 lin.

Hab. In Australasia. In Mus. nostr. (nunc in Mus. Hopeiano Oxoniæ).

Gynoplistia cyanea.

Westw., in Lond. & Edinb. Phil. Mag., April, 1835, p. 280.

Nigra, abdomine chalybeo purpureoque nitenti; femoribus tibiisque ad basin minus obscuris; alis obscure venosis costa maculisque duabus subcostalibus fuscis; fœm. antennis mutilatis. Long. corp. 6 lin.

Hab. In Nova Hollandia. In Mus. Hopeiano Oxoniæ (*olim nostr.*).

Obs. A Tipulideis omnibus colore metallico discrepat.

[*Limnophila metallica*, Schiner, Novara Dipt. p. 41, from Sydney, appears to be very closely allied to this species, but the description given by that author does not mention the two subcostal brown spots of the wings.]

GYNOPLISTIA.

Sectio 2da. Corpus minus gracile. Antennæ maris paullo crassiores, singulo articulorum 3—14 ramum supra emittente; articulo 15mo supra acute producto, reliquis simplicibus. Antennæ fœm. articulis 3—11 ramum breviorem emittentibus, articulo 12mo sequentibus crassiori, articulo 17mo. 16mo longiore, ovali.

Gynoplistia bella.

Ctenophora bella, Walker, Ent. Mag., ii. 470; Westw., Lond. & Edinb. Phil. Mag., April, 1835, p. 280 (*G. bella*).

G. variegata, Westw., Zool. Journ. vol. v. No. 20, p. 448; plate xxii., figs. 12, 13.

Nigra; abdomine (nisi apice), alarum femorum tibiarumque basi fulvis; alis pallidis apice fasciisque tribus transversis nigris marginem posticum haud attingentibus, antice et in medio alæ lineis duabus nigris longitudinalibus, una costali, altera centrali conjunctis.

Long. corp. maris 4½ lin.; fœm. (oviductu incluso) 5½ lin. Expans. alar. maris 7 lin., fœm. 11 lin.

Hab. In Australasia. In Mus. nostr. (nunc in Mus. Hopeiano Oxoniæ).

Gynoplistia annulata. (Pl. XVIII., fig. 7, antenna).

Westw., in Lond. & Edinb. Phil. Mag., April, 1835, p. 280.

♀. Nigra thorace coxisque læte fulvis; alis fuscis; abdomine sericeo subaurea obtecto; tibiis annulo centrali albo tarsisque basi fulvescentibus; antennis fœm. 17-articulatis, articulis 3—9 ramum brevem obtusum emittentibus, 10mo interne acute producto, reliquis simplicibus [oviductu fœm. longo acutissimo.] Long. corp. 5 lin. Expans. alar. 9½ lin.

Hab. In America Septentrionali. In Mus. Hopeiano Oxoniæ.

The Baron Osten-Sacken (in Loew's Mon. Dipt. North Amer., part i., April, 1862), observes, with reference to *Gynoplistia annulata*, that as "it is hardly probable that an Australian genus should also be represented on the continent of North America, it is to be presumed either that the genus is different or that the statement is based upon an error of locality." He further adds (*in litt.*, 18th March, 1881), that "the white rings on the tibiæ of *Gynoplistia annulata* are a character which belongs to all the *Ctenophoræ* of South-Eastern Asia with which I am acquainted."

The label attached to the type specimen in the Oxford Museum is in the handwriting of Mr. Hope, and is clearly written N. A.

Gynoplistia punctipennis.

Westw., in Ann. Soc. Ent. France, 1835, vol. iv. p. 682.

Capite et thorace cinereis; hujus dorso fusco, augulis humeralibus utrinque puncto nigricanti; abdomine fœm. obscure fusco, elongato, stylo rufescenti; alis limpidis, costa tenui, maculisque nonnullis parvis (ad conjunctionem venarum transversarum) alteraque stigmaticali majori fuscis; pedibus longioribus subtestaceis; femoribus tibiisque ad apicem fuscis, tarsorum articulis 2—4 albidis; antennis fœm. fuscis, basi pallidioribus, 16?-

articulatis, articulis 3—8 interne acute productis vix ramosis. Long. corp. 7 lin. Expans. alar. 12 lin.

Hab. Nova Hollandia. In Mus. Hopeiano Oxoniæ (*olim nostr.*)

[*G. Cloniophora*, Schiner, Novara, Dipt., p. 40.]

Gynoplistia Wakefieldii. (Pl. XVIII., fig. 5, and details).

Elongata gracilis, cinerascens, abdominis apice subcastaneo, capite parvo, antennis mediocribus, nigris, maris 16-articulatis, articulo 3tio subtus dente brevi armato, 4to ad 13um singulo infra ramo gracili (ramis intermediis longioribus), instructis; tribus ultimis inermibus; fœminæ brevioribus etiam 16-articulatis, articulis 4—11 serratis. Rostrum breve, palpis rostro parum longioribus crassis setosis; thorace antice utrinque macula parva obscura, dorsoque vittis 4 nigricantibus, mesonoto immaculato; abdomine elongato, maris apice clavato; alis limpidis fusco-guttatis, gutta majori paullo ante medium et versus costam alæ, fasciaque abbreviata obliqua inter medium et apicem alæ; guttisque 4—6 in area pobrachiali longitudinaliter dispositis; pedibus gracilibus longitudine mediocribus; rufescenti plus minusve tinctis; femoribus ante apicem annulo pallido notatis; abdomine fœminæ elongato, oviductu longissimo acutissimo. Long. corp. maris $5\frac{1}{3}$ lin., fœm. $7\frac{1}{2}$ lin. Expans. alar. maris 9 lin., fœm. 10 lin.

Hab. In Nova Zealandia (*D. Wakefield*). In Mus. Hopeiano Oxoniæ, ♂ et ♀.

This insect is closely allied to *Gynoplistia punctipennis*, Westw., from New Holland, but is at once distinguished by the row of small dark dots arranged in a longitudinal series in the pobrachial cell of the wing, preceded by a dark patch at the origin of the præ- and pobrachial cells. From *G. subfasciata*, White MS., Walk., Cat. Dipt., p. 74, which, like *G. Wakefieldii*, inhabits New Zealand, it is distinguished by wanting the "two brown bands, which are distinct on the fore border, but pale, interrupted, and almost dentate towards the hind border."

This last species has been formed by Schiner into the genus *Cloniophora* (Novara Dipt., p. 40), founded upon a very broken specimen of the female. Walker gives no description of the antennæ, and Schiner describes that

of the female as 18-jointed, the 3rd to the 13th joints having a single row of branches on the inner side, and the ovipositor unusually long and robust.

The Baron Osten-Sacken, who has carefully examined the type of *G. subfasciata* in the British Museum, assures me of its distinction from *G. Wakefieldii*.

Limnobiorhynchus.

Westw., Ann. Soc. Ent. France, vol. iv. 1835, p. 683 ; Macquart, Dipt. Exot. i. part 2, p. 177.

[*Geranomyia*, Osten-Sacken, Cat. Western Dipt. p. 196.]

Limnobiæ affinis. Corpus elongatum, gracile. Caput parvum oculis magnis ; proboscide gracili, cylindrica, porrecta, fere longitudine corporis ; palpis haud conspicuis ; antennæ breves, graciles, ad basin proboscidis insertæ, thorace multo breviores; maris 14-articulatæ, articulis 2 basalibus majoribus, reliquis æqualibus oblongo-ovatis ; fœm. 12 vel 13-articulatæ brevissimæ, (articulis 2 vel 3 basalibus incrassatis, reliquis 10 sensim ad apicem attenuatis) articulis 2 terminalibus setis 6 longissimis, penicillum efformantibus, instructis. Prothorax in collum gracile productus. Alæ iridescentes, haud pilosæ, venis in alis masculinis fere ut in *Limnobia xanthoptera*, Meig. (Schilling Beitr. Dipt. t. 2, fig. 1), dispositis ; in fœminis cellulis marginalibus cum submarginali omnino coalitis (vena longitudinali illas in mare dividente omnino obliterata) in mare etiam nubila stigmaticalis exstat, locum venæ transversæ rudimentalis indicante.

Obs. Ex omnibus Tipulideis adhuc cognitis differt proboscide longissima, inde affinitatem cum Culicideis possidere videtur.

As the species upon which I proposed this genus have afforded much discussion among dipterologists, I have thought it advisable to reproduce them verbatim below. These insects were three in number ; two of them were from Bahia, in Brazil, communicated to me by the late J. Aspinall Turner, M.P. ; they were a male and a female, corresponding in size, colour, and general appearance, pinned with the same small short kind of pin, and both having a very long porrected proboscis. Under these circumstances I did not hesitate to regard them as the opposite

sexes of one and the same species (*L. brasiliensis*), although they differed in the structure of the antennæ, and slightly also in the veining of the wings, the male having an additional longitudinal vein running to the apex of the wings.

The third specimen was an unique insect from Canada, which I obtained from the collection of the late A. H. Haworth, and which agreed with the male from Bahia in the antennæ and wings (*L. canadensis*).

Previous, however, to the publicatiou of my memoir containing the description of *Limnobiorhynchus* in the French Annalles for 1835, Mr. A. H. Haliday had published the characters of a British genus with a long proboscis in the first volume of the 'Entomological Magazine,' January, 1833, under the name of *Geranomyia unicolor*, of which a figure and detailed description were published by Mr. Curtis in his 'British Entomology,' pl. 573, on November 1st, 1835.* This insect, having 14-jointed antennæ, is congeneric with the males of *Limnobiorhynchus brasiliensis* and *canadensis*, leaving the generic name to be restricted to the female of *L. brasiliensis*.

Limnobiorhynchus brasiliensis. (Pl. XIX., figs. 10, 11).

Westw., Ann. Soc. Ent. France, 1835, p. 683.

Pallide luteo-fuscescens; thorace fusco trivittato, post-scutello cinerascenti; oculis, antennis, et proboscide nigris; segmentis abdominalibus ad apicem in mare fuscis; pedibus fuscis; tibiarum apice nigro; alis iridescentibus, venis costalibus fulvescentibus. Long. corp. (proboscide excepta) mas 3 lin., fœm. $5\frac{1}{2}$ lin. Expans. alar. $6\frac{1}{2}$—7 lin.

Hab. Apud Bahiam Brasileæ. In Mus. Hopeiano Oxoniæ (*olim nostr.*).

* The following are the chief characters of *Geranomyia* given by Mr. Curtis:— Antennæ alike in both sexes, 14-jointed. Trophi elongated and porrected, forming a proboscis considerably longer than the antennæ. Labrum long and linear, slightly hairy at the apex. Tongue very long and linear, pointed, and a little dilated below the apex, which is hairy. Lip very long, divided from the base, forming two pilose branches, terminated by oblique elliptical lobes. Palpi clothed with short hairs, short, biarticulate? [The veins of the wings are arranged as in *L. brasiliensis*, male.]

Limnobiorhynchus canadensis.

Westw., Ann. Soc. Ent. France, 1835, p. 684.

Præcedenti valde affinis. Differt thorace, proboscide, tibiarum apice halteribusque concoloribus, femorum apice infuscato, venis costalibus fuscescentibus. Long. corp. mas. 3¼ lin. Expans. alar. 7 lin.

Hab. In Canada. In Mus. Hopeiano Oxoniæ (*olim nostr.*).

Another species, congeneric with *Geranomyia unicolor*, was described by Macquart in the 'Histoire naturelle des iles Canaries' of Webb and Berthelot, and in his 'Dipteres exotiques,' vol. i. pl. 7, fig. 1, under the name of *Aporosa maculipennis*, and another species, *A. fuscana*, from the Isle of Bourbon.

Of this genus six species are contained in the Berlin Museum, and have been described by Dr. Loew in the 'Linnæa Entomologica,' vol. v. p. 315 *et seq.* (1851), under the names of *Aporosa insignis* (Brazil), *A. tristis* (Brazil), *A. rufescens* (Porto Rico), *A. tibialis* (Brazil), *A. virescens* (St. Thomas), and *A. valida* (Chili).

Dr. Loew (Monogr. Dipt. N. Amer. i. p. 10) gives *Limnobiorhynchus* as synonymous with *Toxorhina*, Loew (Bernstein und Bernstein-fauna. Schul prog, Berlin, 1850, p. 37, and Linn. Ent. v. p. 400, Berl., 1851, pl. ii. figs. 16—23), founded upon several species found in amber, and one living species from Porto Rico.

In the Proc. Acad. Nat. Sci., Philad., 1859, p. 221, the Baron Osten-Sacken has discussed the question, and arrived at the opinion of the identity of *Limnobiorhynchus* and *Toxorhina*, establishing the genus *Elephantomyia* for my *L. canadensis*, of which he had obtained great numbers of both sexes from Trenton Falls.

In the Proceedings of the Entomological Society of Philadelphia, vol. iv. p. 229, the same author has again reviewed the arguments in favour of the identity of the two genera, and has described two new species of *Toxorhina*, in addition to *T. fragilis*, Loew, named *T. magna*, male and female, from New Jersey, and *T. muliebris*, male, from Massachusetts. As the venation of the wings in the two sexes of *T. magna* is identical, he moreover considers that my statement of the difference

in the venation of the wings in the sexes of *L. brasiliensis* is erroneous; that no such difference in the venation of the wings of the two sexes of the same species can exist, and consequently that the genus *Limnobiorhynchus* "has no existence at all." He consequently refers my male, *L. brasiliensis*, to the genus *Elephantomyia*, to which he assumes *L. canadensis* to belong, and my female to *Toxorhina*. Thus he adds:—"The confusion which for such a long time was connected with the existence of the genera *Toxorhina* and *Limnobiorhynchus* seems to have reached, or at least to be very near, its solution! This confusion was principally due to the very striking coincidence that both Westwood and Loew possessed only males of a genus with a submarginal cell, and only females of another genus without a submarginal cell. Both of these authors were so much struck by the extraordinary prolongation of the proboscis in both genera that they united them into one, with this difference, however, that Westwood noticed the difference in the neuration, and described it as sexual; Loew, on the contrary, entirely overlooked this difference."

In the Baron Osten-Sacken's 'Western Diptera,' published in the Bulletin of the U. S. Geol. and Geogr. Survey, vol. iii. No. 2, p. 196, he has sunk his genus *Elephantomyia*, and recorded my *L. canadensis* in the genus *Geranomyia* of Haliday.

The synonymy of these genera will thus stand:—

GERANOMYIA.

Geranomyia, Haliday (1833), Curtis (1835).
Limnobiorhynchus, Westw. (males only), 1835.
Aporosa, Macquart, Loew.
Elephantomyia, Osten-Sacken.

LIMNOBIORHYNCHUS.

Limnobiorhynchus, Westw. (females only), 1835.
Toxorhina, Loew (Bernstein, &c.), and 'Linnæa Entomologica,' vol. v. p. 400.

ASTHENIA.*

Westw. in Guérin-Ménev. Mag. Zool. 1842, Ins. pl. 94; Walker, Cat. Dipt., Brit. Mus., pt. i. p. 28.

Liponeura, Loew, Stettin Ent. Zeit. 1844.
Apistomyia, Bigot, Ann. Soc. Ent. France, 1862.
Blepharocera, Loew, Cent. iv. 1863; Osten-Sacken, 'Western Diptera,' p. 194.
Paltostoma, Schiner, Verh. zool-bot. Ges. Wien. 1866.
Hammatorhina, Loew, Bull. Soc. Ent. Ital. 1869.
Bibiocephala, Osten-Sacken in Hayden's Geol. Rep. 1873.
Hapalothrix, Loew, Ent. Mon. Berl. 1876.

Caput mediocre, oculis maximis fere omnino occupatum. Oculi antice emarginati pro insertione antennarum. Antennæ breves simplices, attenuatæ, 15-articulatæ, articulo 1mo magno, reliquis magnitudine et crassitudine sensim decrescentibus. Trophi elongati rostrum [longitudine capitis] formantes. Labrum elongatum corneum; mandibulæ planæ corneæ interne valde denticulatæ, labro paullo longiores; palpi 5-articulati, mandibulis paullo breviores, articulis apicalibus gracilioribus. Partes reliquæ oris in situ haud conspicuæ. Thorax ovalis supra mediocriter convexus. Abdomen sessile in specimine nostro unico mutilatum, inde sexum haud possum determinare. Pedes elongati debiles simplices, longitudine fere æquales. Coxæ minutæ. Tibiæ ecalcaratæ. Tarsi 5-articulati, articulo 1mo longiori, reliquis longitudine decrescentibus; unguibus duobus longis gracilibus, versus basin interne dente munitis terminati. Alæ magnæ teneræ, cellula unica subcostali, ad apicem venas tres longitudinales emittenti, vena proxima interna bifida, anali simplici.

Genus novum ad distributionem naturalem familiæ Tipulidarum utilissimum, habitum Cecidomyiarum exhibens, quamvis generibus *Macropezæ*, *Spheromiadi*, Curt., et *Hydrobæno*, Fries, magis affine. E *Macropeza* differt pedibus longitudine æqualibus, tarsis simplicibus et conformibus, ore haud longe rostrato, antennarumque articulis 5 ultimis præcedentibus haud longioribus; e *Spheromiadi* etiam eodem modo antennis differt, nec non alarum venisque crassis et pedibus longioribus, cum tarsis simplicibus; *Hydrobænus* denique ex hoc genere

* [This name is preoccupied in *Lepidoptera*.—W. F. K.]

antennis ad apicem clavatis, thoraceque cristato facile distinguitur.

Asthenia fasciata.

Westw., *op. cit.* supra.

Luteo-fulva, thoracis dorso testaceo; abdomine fusco, segmentis ad basin albo fasciatis. Caput obscurum, oculi brunneo-nigri; antennæ nigræ, articulo 1mo et dimidio basali 2di flavis. Thorax luteo-flavus, dorso mesothoracis testaceo. Pedes lutei, tarsis fuscescentibus; alæ vitreæ vix luteo tinctæ, venis basique lutescentibus; halteres lutei, clava nigra. Expans. alar. $6\frac{1}{4}$ lin.

Hab. In Albania (Dom *S. S. Saunders*).

Megistocera, *Wiedemann.*

Megistocera dimidiata. (Pl. XVIII., fig. 9, details).

Westw., Zool. Journ., vol. v. p. 451 (September, 1835); Ann. Soc. Ent. France, vol. iv. p. 682 (1835).

Fulvo-ochracea, thorace interdum obscurius bivittato, ano obscuro, antennis longissimis fuscis basi fulvis; femoribus tibiisque ad apicem obscuris; alis in utroque sexu hyalinis, costa lata luteo-fuscanti, cellula prima submarginali vena obliqua sub stigmate divisa. Abdomine abbreviato; fœm. antennis brevibus 13-articulatis. Expans. alar. mas et fœm., 16—$16\frac{1}{2}$ lin.

Hab. In Australasia. In Mus. Hopeiano Oxoniæ (*olim Haworthii et nostr.*).

Descriptio maris fere cum mare *M. disparis*, Walker,* convenit. Differt palpis flavis, apice nigris, thorace omnino ferrugineo postice pallidiori. Fœmina mari simillima; capite omnino ochraceo, antennis ochraceis apicem versus fuscescentibus, palpis similiter coloratis pedibus ochraceis, apice femorum tibiarum tarsorumque nigro; abdomine ochraceo, apice obscuro.

Obs. 1. In specimine nostro *M. disparis*, Walk., caput ochraceum maculis duabus parvis inter oculos notatum est, palpi et nasus nigricantes et cellula prima submarginalis (sub stigmate) vena obliqua dividitur.

* *Megistocera dispar*, Walker, Ent. Mag. ii. 468 (January, 1835) = *Tipula costalis*, Swederus, Act. Holm. 1787, p. 286; Walk., Cat. Dipt. Brit. Mus., pt. iv., Appendix, p. 1151 = *Megistocera limbipennis*, Macq., Dipt. Exot. i. 60, pl. 6, fig. 1.

Obs. 2. Descriptiones *Megistoceræ* specierum e sexu masculino depromptæ. In specie supra descripta et in *M. dispare* antennæ fœm. sunt capite breviores et 13-articulatæ, articulo 1mo majori, 2do parvo, 6 proximis magnis subnodosis sensim minoribus, reliquis 5 gracilibus filiformibus. An structura eadem in femineis specierum Wiedemanni?

Obs. 3. "Your *Megistocera dimidiata* will now be better placed in the genus *Macrothorax*, Jaennicke, Neue Exot. Dipt. (1867)."—Baron Osten-Sacken *in litt.*, 18th March, 1881.

Caloptera.

Guérin, Voy. Coquille, pl. 20.

Caloptera Nepalensis.

Westw., Ann. Soc. Ent. France, vol. iv. p. 681 (1835).

Nigra, abdomine plumbeo cincto; alis nigricantibus, basi flavis, fasciaque incompleta centrali transversa, alba ornatis. Mas et fœm. Long. corp. maris, 10 lin. Expans. alar. 16 lin.

Hab. In Nepalia. In Mus. Hopeiano Oxoniæ (*olim nostr.*).

Cerozodia.

Westw., Lond. & Edinb. Phil. Mag., vol vi., April, 1835, p. 281.

Ozocera, Westw., Zool. Journ., vol. v. No. 20, p. 449 (September, 1835).
(Nec *Ozodicera*, Macquart).

Limnobiæ affinis. Alarum venæ ut in *Gynoplistia nervosa* (fig. 10) dispositæ. Antennæ, thorace longiores 32-articulatæ; articulis 3tio ad 31mum ramulum longissimum gracilem pilosum e basi emittentibus (fig. 5); oculi maris maximi interne lunati, subtus fere conniventes. Palpi perbreves 3-articulati, articulo 1mo minuto, 2do majore subovato, 3tio paullo majori, spatuliformi. Thorax ovato-rotundatus. Abdomen maris longum cylindricum, unguibus duobus terminatum.

The insect forming this genus exceeds all the other pectinated *Tipulidæ* in the great number of the ramose joints of the antennæ.

Cerozodia interrupta. (Pl. XIX., fig. 13, details).

Westw., Lond. & Edinb. Phil. Mag. *l. c.* supra; Zool. Journ. v. p. 449, pl. xxii. fig. 5, antenna.

Pallide ochracea, thorace subobscuriore; oculis nigris; antennarum ramulis pallide fuscis; alis pallidis venis subfuscis, linea gracili interrupta cinerea per areolam elongatam subcostalem currente. Long. corp. 10 lin. Expans. alar. 16 lin.

Hab. In Australasia apud Swan River. In Mus. Hopeiano Oxoniæ.

OZODICERA.

Macq., Dipt. Exot., p. 92; Westw., Lond. & Edinb. Phil. Mag., vol. vi. p. 280. (Nec *Ozocera*, Westw., Zool. Journ., No. 20.)

Hemicteina, Westw., in Zool. Journ. vol. v., No. 20, p. 450 (September, 1835).

Tipulæ affinis. Rostrum capite æque longum. Palpi articulo ultimo præcedente quadruplo longiore annulatissimo. Antennæ maris graciles 13-articulatæ, thoracis longitudine, singulo articulorum 4—9 ramum subtus emittente, articulum longitudine æquante; articulis 10—13 longioribus simplicibus, gracillimis (tab. xxii. fig. 17) alæ areola discoidea, subapicali, 6-angulata, postice venas 4 simplices emittente (fig. 16) abdomen maris elongatum clavatum. Pedes omnes (præsertim tarsi) longissimi.

Ozodicera pectinata.

Wiedemann, Westw., Lond. & Edinb. Phil. Mag. vi. p. 280, April, 1835.

Ozodicera ochracea, Macq., Dipt. Exot., p. 92.

Ozodicera gracilis. (Pl. XVIII., fig. 8, details).

Westw., Lond. & Edinb. Phil. Mag. vi. 281.

H. gracilis, Westw., Zool. Journ. vol. v. p. 450; pl. xxii. figs. 16, 17.

Mas. Fusco-ochracea, oculis nigris, rostro subfulvo; thorace subvittato; alis pallide subfuscescentibus; venis obscurioribus; abdomine segmentis duobus apicalibus nigris, ano fulvescente; pedibus unicoloribus subfuscis. Long. corp. maris, 10 lin. Expans. alar. 16 lin.

Hab. In Brasilia. In Mus. Hopeiano Oxoniæ (*olim nostr.*).

Obs. Congenerica est, at species minor, pedibusque forsan brevioribus *Tipula pectinata*, Wied., "ochracea, thorace vittato, antennis pectinatis, alis flavidis. Long. corp. maris 8 lin." Wiedemann (Aussereurop. Zweifl. Ins. vol. i. p. 47) observes that in its 4-jointed palpi *T. pectinata* approaches the *Limnobiæ*, in its pectinated antennæ the *Ctenophoræ*, and in the number of the joints of the antennæ and venation of the wings the *Tipulæ*.

"A speciebus cæteris (vere Tipulideis) longipedalibus ab auctoribus descriptis species nostra differt; scil *Limnobia longimana*, Fab., tarsorum anticorum apicem album habet—*Tipula longipes*, Fab., pedes albo annulatos apicibus albis—*Tipula breviventris*, Wied., tibias basi alba possidet—*Polymera hirticornis*, Wied., Fab. (*Chironomus*) antennis 28-articulatis gaudet—*Leptotarsus Macquartii*, Guér. Voy. Coq. Ins. pl. 20, f. 1, abdomen fulvum nigro-maculatum antennasque (e figura) 10-articulatas simplices habet—*Dolichopeza sylvicola*, Curtis, 1825 (*Leptina*, Meigen, vol. vi. tab. 21. *Dolichopeza* in textu), antennis 12-articulatis cellulaque discoidali subapicali nulla gaudet."

Ozodicera longipedalis.

Westw., Trans. Ent. Soc. Lond. 1876, p. 503, pl. iii., figs. 4, 4*a*, 4*b*.

Hab. In Australia. In Mus. Britann.

Obs. "Your *Ozodicera longipedalis* is the same as *Pedicia gracilis*, Walk., List, &c., i. 37 (*sine patria*); but I do not think that species described without locality deserve any recognition, especially when they are placed in the wrong genus." Osten-Sacken *in litt.*, 18th March, 1881.

Pedicia gracilis is now marked in the British Museum as from New Zealand.

PTILOGYNA.

Westw., Lond. & Edinb. Phil. Mag.. vol. vi., p. 280 (April, 1835); Zool. Journ. vol. v. No. 20, p. 448 (September, 1835).

Tipulæ affinis. Rostrum capiti æque longum; antennæ maris 13-articulatæ; ramulis 7 internis et 15 externis longis instructæ, articulo 3tio ramum unicum e basi emittente; articulis 4 ad 9 ramos duos longos e basi, alterumque e medio paullo breviorem emittentibus, 10mo longo

ramis duobus basalibus alteroque brevi fere apicali; 11 ad 13 brevibus simplicibus; fœm. 14-articulatæ, thoracis vix longitudine, graciles, ramulis 7 internis et 8 externis brevibus articulo 1mo crasso, 3tio ad apicem infra producto, singulo articulorum 4 ad 10 ramos duos ad basin emittente, ramo externo quam articulum ipsum paullo longiore, interno breviore, articulis 4 terminalibus simplicibus (tab. xxii. fig. 15, antenna fœm.). Alæ (fig. 14) cellula discoidea subapicali 7 angulata, venis fere ut in *Limnobia bisulcata*, Schum., dispositis (*vide* Schill. Beitrage, tab. 1, Dipt. fig. 3a).

Ptilogyna ramicornis. (Pl. XIX., fig. 14).

Tipula ramicornis, Walker, Ent. Mag. ii. 469 (January, 1835).

Ptilogyna ramicornis, Westw., Lond. & Edinb. Phil. Mag. vol. vi. p. 280 (April, 1835).

Ptilogyna marginalis, Westw., Zool. Journ. vol. v. p. 448, pl. xxii. figs. 14, 15, ♀ (September, 1835).*

Fusca; capite, antennarum basi, thorace postice, præsertim in mare, segmentorum abdominalium lateribus femoribusque (nisi apice), fulvis; alis ad costam dimidiato-fuscis, maculis duabus parvis ante medium alterisque duabus apicalibus pallidis; venis (nisi internis) fusco-nubilis. Long. corp. fœm. $11\frac{1}{2}$ lin. Expans. alar. $18\frac{1}{2}$ lin. Mas paullo minor.

Hab. In Australia. In Mus. Hopeiano Oxoniæ (*olim nostr.*). Mas et fœm.

Bittacomorpha.

Westw., Lond. & Edinb. Phil. Mag. vol. vi. p. 281, 1835.

Genus anomalum *Tipulariis terricolis*, Latr., evidenter pertinens. Caput et thorax parva. Abdomen valde elongatum et depressum. Pedes longitudine mediocres, femoribus tibiisque gracilibus; tarsis basi dilatatis dense ciliatis; alæ venis perpaucis fere ut in genera *Sciaphila* dispositis: antennæ graciles, filiformes. Palpi capitis longitudine articulis 4 æqualibus. Lobi labiales magni. Ocelli 0?

* The long delay in the publication of this part of the 'Zoological Journal' deprived my names of this and several other species of their priority.

Bittacomorpha clavipes. (Pl. XIX., fig. 12).

Tipula clavipes, Fab. Sp. Ins. 2, 404.

Ptychoptera clavipes, Fab. Syst. Antl.; Wied. Auss. Zweifl. Ins. i. 59.

Long. corp. 8 lin. Expans. alar. $8\frac{1}{4}$ lin.

Hab. In America Septentrionale, Newfoundland. In Mus. Hopeiano Oxoniæ; olim nostr. (Dom *Churton*).

Semnotes.

Westw., Trans. Ent. Soc. Lond. 1876, p. 501.

Semnotes imperatoria, Westw., *op. cit.*, p. 502, pl. iii. fig. 1.

Hab. In Australia, Melbourne. In Mus. Hopeiano Oxon. et Britann.

Semnotes ducalis, Westw., *op. cit.*, p. 503, pl. iii. figs. 2*a*, 2*b*.

Hab. In Australia boreali (*Damel*). In Mus. Hopeiano Oxoniæ.

Tipula.

Tipula Brobdignagia, Westw., Trans. Ent. Soc. Lond. 1876, p. 504, pl. iii. fig. 3.

Hab. In China boreali. In Mus. Britann.

Tipula Mikado, Westw., Trans. Ent. Soc. Lond. 1876, p. 504.

Hab. In Japonia. In Mus. Hopeiano Oxoniæ.

Limnobia.

Limnobia Satsuma, Westw., Trans. Ent. Soc. Lond. 1876, p. 504, pl. iii. figs. 5*a*, 5*b*.

Hab. In Japonia. In Mus. Hopeiano Oxoniæ.

Libnotes.

Westw., Trans. Ent. Soc. Lond. 1876, p. 505.

Libnotes Thwaitesiana, Westw., *op. cit.*, p. 505, pl. iii. figs. 6*a*, 6*b*.

Hab. Ceylon. In Mus. Hopeiano Oxoniæ.

PLATYURA.

Westw., Trans. Ent. Soc. Lond., 1st series, vol. v., p. 231 (= *Platyroptilon*, Westw.)

Platyura (*Platyroptilon*) *Miersii*, Westw., *op. cit.*, p. 231, pl. 23, fig. 3, and details.

Hab. In Brasilia. In Mus. D. Miers (nunc in Mus. Hopeiano Oxoniæ).

CULEX, *Linn.*

Culex alternans, Westw., Ann. Soc. Ent. France, vol. iv. p. 681 (1835).

Pallide fuscescens; abdomine albido-annulato, alis hyalinis; venis, præsertim costalibus, fulvescentibus, squamis fuscis ornatis, nisi regione stigmaticali, ubi squamæ albæ videntur, aliis albo nigroque alternatis; pedibus fulvescentibus, fusco squamosis; femoribus ante apicem, tibiis versus et pone medium, geniculis tarsisque albo annulatis. Long. corp. (probosc. excl.) 4 lin. Expans. alar. 8 lin.

Hab. In Nova Hollandia. In Mus. Hopeiano Oxoniæ (*olim nostr.*).

EXPLANATION OF THE PLATES.

PLATE XVII.

FIG. 1. *Mongoma fragillima*, natural size; 1 *a*, antenna; 1 *b*, wing; 1 *c*, extremity of anterior tibia; 1 *d*, extremity of anterior tarsus.

2. Details of *Dapanoptera plenipennis*; 2 *a*, head, seen sideways; 2 *b*, wing; 2 *c*, extremity of body.

3. *Sigmatomera Amazonica*, magnified; 3 *a*, head, seen in front; 3 *b*, head and antennæ, seen sideways; 3 *c*, wing; 3 *d*, apex of tibia.

PLATE XVIII.

FIG. 4. *Eriocera lunata*, natural size; 4 *a*, head and antenna of male, magnified; 4 *b*, head, sideways; 4 *c*, wing; 4 *d*, extremity of tibia; 4 *e*, apex of abdomen, from above; 4 *f*, ditto, seen sideways; 4 *g*, one of the male appendages at the extremity of the body.

Fig. 5. *Gynoplistia Wakefieldii*, details; 5 *a*, head of male, seen sideways; 5 *b*, palpus of ditto; 5 *c*, antenna of ditto; 5 *d*, antenna of female; 5 *e*, wing; 5 *f*, extremity of body of male, seen sideways; 5 *g*, ditto, seen from above; 5 *h*, extremity of body of female.

6. *G. vilis*, antenna of male.

7. *G. annulata*, antenna of female.

8. *Ozodicera gracilis*, details; 8 *a*, antenna of male; 8 *b*, wing.

9. *Megistocera dimidiata*, details; 9 *a*, head and base of antenna of male; 9 *b*, antenna of female; 9 *c*, extremity of wing.

PLATE XIX.

Fig. 10. *Limnobiorhynchus Brasiliensis*, female, natural size; 10 *a*, head and rostrum magnified; 10 *b*, antenna of female; 10 *c*, wing.

11. *Geranomyia Brasiliensis*, male, details; 11 *a*, rostrum with the parts separated (*a*, one of the maxilla, with its subapical style; *b*, *c*, labrum; *d*, mentum; *e*, labial palpi; *f*, laciniæ of labium); 11 *b*, basal portion of the rostrum, with the parts similarly lettered; 11 *c*, labial palpi, magnified; 11 *d*, bases of laciniæ of labium; 11 *e*, extremity of maxilla, with its style; 11 *f*, antenna of male; 11 *g*, wing of male.

12. *Bittacomorpha clavipes*, details; 12 *a*, head, seen in front; 12 *b*, wing.

13. *Cerozodia interrupta*; 13 *a*, head of ditto, seen from above: 13 *b*, ditto, seen from below; 13 *c*, antenna of male.

14. *Ptilogyna ramicornis*, details; 14 *a*, antenna of male; 14 *b*, antenna of female; 14 *c*, extremity of wing.